

REMARKS

The Office Action mailed October 10, 2007 has been carefully considered.

Reconsideration in view of the following remarks is respectfully requested.

Claim Status and Amendment of the Claims

Claims 9-15 and 20-25 are currently pending.

No claims stand allowed.

Claims 9-15 and 20-25 have been amended to further particularly point out and distinctly claim subject matter regarded as the invention. Support for these changes may be found in the specification, figures, and claims as originally filed.

Claims 1-8 and 16-19 were previously cancelled, without prejudice or disclaimer of the subject matter contained therein.

Judicially-created Double Patenting

Claims 9, 11, 15, and 20-24 stand rejected pursuant to the judicially-created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1, 5 and 9 of prior United States Patent No. 6,606,628.¹ Submitted herewith is a Terminal Disclaimer executed by attorney of record David B. Ritchie. Withdrawal of this rejection is respectfully requested.

The 35 U.S.C. § 102 Rejection

Claims 9-15 and 20-25 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Ogawa.^{2 3} This rejection is respectfully traversed.

¹ Office Action mailed October 10, 2007, pp. 2-3.

² U.S. Patent No. 6,115,799 to Ogawa.

³ Office Action at p. 3.

According to the M.P.E.P., a claim is anticipated under 35 U.S.C. § 102(a), (b) and (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.⁴

As an initial matter, the Office Action inconsistently identifies the pending and currently rejected claims. The Office Action indicates “Claims 9-25 are pending in the application. Claims 9, 11-15, 20-24 are independent claims. Claims 1-8 and 16-19 are cancelled.”⁵ The Office Action also indicates “Claims 9-25 are rejected under 35 U.S.C. 102(e) ...”⁶ As Claims 1-8 and Claims 16-19 were previously cancelled without prejudice or disclaimer, the Applicants assume the Examiner intended to indicate the pending and currently rejected claims are Claims 9-15 and 20-25.

Claim 9

Claim 9 recites:

A method comprising:

scanning a nonvolatile memory medium to find a first memory block containing a header indicating that the first memory block is the first memory block of an existing file stored on the nonvolatile memory medium; and
finding a next memory block using a next block pointer stored in the header of the first memory block, if the existing file comprises more memory blocks than the first memory block, the existing file being opened upon completion of the finding.

The Examiner states:

... Ogawa teaches scanning the a nonvolatile memory medium to find a first memory block containing a header indicating that the first memory block is the

⁴ Manual of Patent Examining Procedure (MPEP) § 2131. See also *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

⁵ Office Action at p.2, first paragraph.

⁶ Office Action at p. 3.

first memory block of an existing file stored on said nonvolatile memory medium col. 5, line 55 to col. 6, line 34; col. 7, lines 9-27.
finding a next memory block using a next block pointer stored in the header of the first block, said existing file being opened upon completion of said finding - col. 6, lines 16-61.⁷

The Applicants respectfully disagree for the reasons set forth below.

Ogawa Does Not Disclose Scanning A Nonvolatile Memory Medium To Find A Memory Block Containing A Header Indicating That The First Memory Block Is The First Memory Block Of An Existing File Stored On The Nonvolatile Memory Medium

Contrary to the Examiner's statement, Ogawa does not disclose scanning a nonvolatile memory medium to find a first memory block containing a header indicating that the first memory block is the first memory block of an existing file stored on the nonvolatile memory medium. In support of the Examiner's statement, the Examiner refers to a portion of Ogawa that refers generally to memory allocation performed by a memory manager, but says nothing about scanning a nonvolatile memory medium to find a first memory block containing a header indicating that the first memory block is the first memory block of an existing file stored on the nonvolatile memory medium as required by Claim 9. The portion of Ogawa cited by the Examiner recites:

FIGS. 3A and 3B are flowcharts for the allocation operation performed by the memory manager. The allocation operation will now be described while referring to the flowchart. A requested size is normalized at step 301. While the memory size unit requested by an application program is one byte, the unit managed by the memory manager is larger because the memory size must be a 4-byte alignment unit in order for the memory manager to prepare the management information MCB header. At step 302, the semaphore for the memory manager is obtained. This is done because when one task involves the performance of an allocation operation while another task involves the performance of an allocation or a release operation, a double allocation and damage to a MCB may result. If an interrupt is inhibited for this reason, however, a control response by a digital camera for the control of a strobe and a shutter is adversely affected. Thus, exclusive control using the semaphore is performed. With the exclusive control provided by this method, the operation of the memory manager will not affect another task operation having a higher priority. At step 303, a current position for the allocation pointer is stored as an allocation start position. This pointer will be

⁷ Office Action at pp. 3-4.

described later. At step 304, the requested size is compared with the free memory block size at the current allocation pointer position. When the requested size is greater, program control advances to step 305 (FIG. 3B). When the requested size and the free memory block size match, program control moves to step 313. When the requested size is smaller, program control goes to step 312. At step 305 (FIG. 3B), a check is performed to determine whether or not the free memory block is the final block. If the memory block is the final block, program control branches to step 306. At step 306, the allocation pointer advances to the next memory block. At step 307, the allocation pointer is set to the head or first block of the main memory. At steps 306 and 307, processing can advance to the next block. At step 308, the allocation start position stored at step 303 is compared with the allocation pointer position. When they match, it is assumed that all the memory blocks have been scanned, and the allocation fails. At step 316, the semaphore is released, and at step 317, an error value indicating that the acquisition of memory has failed is returned to permit program control to be returned to the application. When the allocation pointer position does not match the allocation start position, a check is performed, at step 309, to determine whether a memory block at the allocation pointer position is a free block.⁸

FIG. 6 is a flowchart for the ResetAllocationPointer operation. At step 601 the semaphore is obtained, at step 602 the allocation pointer is moved to the head or first block in the main memory, and at step 603, the semaphore is released.

<Program ROM Manager>

A digital camera stores an image using a file form that a computer can understand, but there are so many types of image files for computers that not all of them can be supported, and new image formats appear regularly.

In this situation, a technique whereby a function can later be added to software inside a camera or that provides the changing of the software function in the camera is important.

One part of the flash ROM 15 in FIG. 1 is employed to store firmware for the digital camera. If a part of a program can be changed or can be added, this is convenient for the development of firmware and for the upgrading of the firmware version for a camera. A program ROM manager that will be explained later provides a function for managing a program written in the flash ROM.⁹

The only header referred to in the cited portion of Ogawa is “MCB header,” which apparently refers to a header for a module created using memory allocated as described in the portion of Ogawa cited by the Examiner. But the cited portion of Ogawa does not disclose scanning a nonvolatile memory medium to find a memory block containing such a header as required by Claim 9. Nor does the cited portion of Ogawa disclose that the MCB header of Ogawa indicates

⁸ Ogawa at col. 5 ll. 55 to col. 6 l. 34.

⁹ Ogawa at col. 7 ll. 9-27.

that the first memory block containing the header is the first memory block of an *existing* file stored on the nonvolatile memory medium. And as the cited portion of Ogawa discusses the allocation of memory with the end result being the creation of a file, the blocks referred to by the Examiner cannot be said to be of an *existing* file as required by Claim 9.

Ogawa Does Not Disclose Finding A Next Memory Block Using A Next Block Pointer Stored In The Header Of The First Memory Block, If The Existing File Comprises More Memory Blocks Than The First Memory Block, The Existing File Being Opened Upon Completion Of The Finding

Contrary to the Examiner's statement, Ogawa does not disclose finding a next memory block using a next block pointer stored in the header of the first memory block, if the existing file comprises more memory blocks than the first memory block, the existing file being opened upon completion of the finding. In support of the Examiner's statement, the Examiner refers to a portion of Ogawa that refers generally to memory allocation performed by a memory manager, but says nothing about finding a next memory block using a next block pointer stored in the header of the first memory block, if the existing file comprises more memory blocks than the first memory block, the existing file being opened upon completion of the finding as required by Claim 9. The portion of Ogawa cited by the Examiner recites:

At step 305 (FIG. 3B), a check is performed to determine whether or not the free memory block is the final block. If the memory block is the final block, program control branches to step 306. At step 306, the allocation pointer advances to the next memory block. At step 307, the allocation pointer is set to the head or first block of the main memory. At steps 306 and 307, processing can advance to the next block. At step 308, the allocation start position stored at step 303 is compared with the allocation pointer position. When they match, it is assumed that all the memory blocks have been scanned, and the allocation fails. At step 316, the semaphore is released, and at step 317, an error value indicating that the acquisition of memory has failed is returned to permit program control to be returned to the application. When the allocation pointer position does not match the allocation start position, a check is performed, at step 309, to determine whether a memory block at the allocation pointer position is a free block.¹⁰

Nowhere does the cited portion of Ogawa refer to a finding a next memory block using a next block pointer which is stored in the header of a memory block of an existing file stored on a nonvolatile memory medium, let alone doing so if the existing file comprises more memory blocks than a first memory block as required by Claim 9.

For the above reasons, the 35 U.S.C. § 102 rejection of Claim 9 based on Ogawa is unsupported by the cited art of record. Thus, a *prima facie* case has not been established and the rejection must be withdrawn.

Claim 13

Claim 13 is an *In re Beauregard* claim corresponding to method claim 9. Claim 9 being allowable, Claim 13 must also be allowable for at least the same reasons as Claim 9.

Claim 10

Claim 10 depends from Claim 9. Claim 9 being allowable, Claim 10 must also be allowable for at least the same reasons as for Claim 9.

Claim 10 recites:

The method of claim 9, further comprising repeating the finding step until either all memory blocks comprising the file have been found or an error condition occurs.

The Examiner states:

... Ogawa teaches repeating said finding step until either all memory blocks comprising said file have been found or an error condition occurs - col. 21, line 54 to col. 22, line 14.¹¹

¹⁰ Ogawa at col. 6 ll. 16-61.

¹¹ Office Action at p. 4.

The Applicants respectfully disagree. Again, the portion of Ogawa cited by the Examiner refers to allocating memory for a file that does not yet exist, so it cannot be said to disclose finding all the memory blocks comprising an existing file as required by Claim 10. For this additional reason, the 35 U.S.C. § 102 rejection of Claim 10 based on Ogawa is unsupported by the cited art of record. Thus, a *prima facie* case has not been established and the rejection must be withdrawn.

Claim 11

Claim 11 recites:

A method comprising:

scanning a nonvolatile memory medium in sizes of one predetermined logical block, the nonvolatile memory medium storing an existing file;
for each logical block, reading a block header containing a magic number;
testing the magic number to determine whether the logical block is a valid block or a free block, and if the logical block is a valid block, performing a comparison of a file name encoded within the block header with a specified file name to be opened;
testing a flag within the block header to determine whether the logical block is the first block of the existing file, if the comparison produces a match; and
returning to the scanning step with the next logical block until either the comparison produces a match or all the blocks have been tested, thereby indicating an error condition, the existing file being opened if the comparison produces a match.

The Examiner states:

... Ogawa teaches scanning a nonvolatile memory medium in sizes of one predetermined logical block, said nonvolatile memory medium storing an existing file - col. 5, line 55 to col. 6, line 34; col. 7, lines 9- 27.
for each logical block, reading a block header containing a magic number; testing the magic number to determine whether the logical block is a valid block or a free block, and if the logical block is a valid block, performing a comparison of a file name encoded within the block header with a specified file name to be opened - col. 5, line 55 to col. 6, line 61; col 13, lines 14-23.
testing a flag within the block header to determine whether the logical block is the first block of the existing file, if the comparison produces a match - col. 6, lines 13-61; col. 21, lines 29-50.

returning to said scanning step with the next logical block until either the comparison produces a match or all the blocks have been tested, thereby indicating an error condition, said existing file being opened if said comparison produces a match - col. 21, line 54 to col. 22, line 14.¹²

The Applicants respectfully disagree for the reasons set forth below.

The arguments made above with respect to Claims 9 and 10 apply here as well.

Additionally, nowhere does the cited portion of Ogawa refer to reading a block header containing a magic number, let alone testing the magic number to determine whether a logical block is a valid block or a free block. Nor does the cited portion of Ogawa refer to performing a comparison of a file name encoded within the block header with a specified file name to be opened as required by Claim 11.

For the above reasons, the 35 U.S.C. § 102 rejection of Claim 11 based on Ogawa is unsupported by the cited art of record. Thus, a *prima facie* case has not been established and the rejection must be withdrawn.

Claim 14

Claim 14 is an *In re Beauregard* claim corresponding to method claim 11. Claim 11 being allowable, Claim 14 must also be allowable for at least the same reasons as Claim 11.

Claim 12

Claim 12 recites:

A method comprising:
scanning a nonvolatile memory medium in sizes of one predetermined-sized
logical block, the nonvolatile memory medium for storing a new file;
for each logical block, reading a block header containing a magic number;

¹² Office Action at pp. 4-5.

testing the magic number to determine whether the logical block is a valid block or a free block, and if the logical block is a free block, modifying its block header to comprise a valid magic number, the name of the new file to be opened, and flags indicating whether the logical block is either the first block or the last block of the new file; and
returning to the scanning step with the next logical block until either the testing step has identified a free block or all the blocks have been tested, thereby indicating an error condition, the new file being opened if the testing step has identified a free block.

The Examiner states:

... scanning a nonvolatile memory medium in sizes of one predetermined-sized logical block, said nonvolatile memory medium for storing a new file - - col. 5, line 55 to col. 6, line 34; col. 7, lines 9- 27.
for each logical block, reading a block header containing a magic number; testing the magic number to determine whether the logical block is a valid block or a free block, and if the logical block is a free block, modifying its block header to comprise a valid magic number, the name of the new file to be opened - col. 5, line 55 to col. 6, line 61; col. 13, lines 14-23.
flags indicating whether the logical block is either the first block or the last block of the new file - col 6, lines 13-61; col. 21, lines 29-50.
returning to said scanning step with the next logical block until either said testing step has identified a free block or all the blocks have been tested, thereby indicating an error condition, said new file being opened if said testing step has identified a free block - col. 10, last paragraph; col. 19, last paragraph; col. 21, line 54 to col. 22, line 14.¹³

The Applicants respectfully disagree for the reasons set forth below.

Contrary to the Examiner's statement, the cited portion of Ogawa does not disclose scanning a nonvolatile memory medium in sizes of one predetermined-sized logical block as required by Claim 12; the cited portion of Ogawa makes no mention of a *logical* block, and the cited portion of Ogawa is silent about the scanning being in sizes of *one* predetermined logical block as required by Claim 12. Additionally, nowhere does the cited portion of Ogawa refer to reading a block header containing a magic number, let alone testing the magic number to determine whether a logical block is a valid block or a free block. Nor does the cited portion of

¹³ Office Action at p. 5.

Ogawa refer to performing a comparison of a file name encoded within the block header with a specified file name to be opened as required by Claim 12.

For the above reasons, the 35 U.S.C. § 102 rejection of Claim 12 based on Ogawa is unsupported by the cited art of record. Thus, a *prima facie* case has not been established and the rejection must be withdrawn.

Claim 15

Claim 15 is an *In re Beauregard* claim corresponding to method claim 12. Claim 12 being allowable, Claim 15 must also be allowable for at least the same reasons as Claim 12.

Claims 20-25

Claims 20-25 are means-plus-function claims. In support of the 35 U.S.C. § 102 rejection of Claims 20-25 based on Ogawa, the Examiner refers to substantially the same portions of Ogawa used in the rejection of method claims 9-12 and *In re Beauregard* claims 13-15. The Examiner is referred to the U.S. Patent and Trademark Office document entitled “Examination Guidelines For Claims Reciting A “Means or Step Plus Function” Limitation In Accordance With 35 U.S.C § 112, 6th Paragraph” (“Guidelines”), a copy of which is submitted herewith for the Examiner’s convenience. The Guidelines state:

... Per our holding, the ‘broadest reasonable interpretation’ that an examiner may give means-plus-function language is that statutorily mandated in paragraph six. Accordingly, *the PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a Patentability determination* ...

... [The] examiner shall interpret a § 112, 6th paragraph “means or step plus function” limitation in a claim as limited to the corresponding structure, materials

or acts described in the specification and equivalents thereof in acts accordance with the following guidelines.¹⁴

The Guidelines state further:

... if a prior art reference teaches identity of function to that specified in a claim, then under Donaldson an examiner carries the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function.¹⁵

As Claims 20-25 of the present application are means-plus-function claims and Claims 9-15 of the present application are non-means-plus-function claims, they cannot be said to be drawn to identical subject matter. Furthermore, the Examiner has not shown for each means-plus-function claim, that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function. Therefore, the Examiner has not established a *prima facie* case and the 35 U.S.C. § 102 rejection of Claims 20-25 must be withdrawn.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

¹⁴ "Examination Guidelines For Claims Reciting A "Means or Step Plus Function" Limitation In Accordance With 35 U.S.C § 112, 6th Paragraph," U.S. Patent and Trademark Office, <http://www.uspto.gov/web/offices/pac/dapp/pdf/exmgu.pdf>, p. 1. (emphasis added)

¹⁵ Guidelines at p. 3. (emphasis in original)

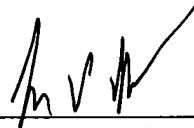
If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

The Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.

Respectfully submitted,

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**Examination Guidelines For Claims
Reciting A "Means or Step Plus Function" Limitation
In Accordance With 35 U.S.C § 112, 6th Paragraph**

The purpose of this memo is to set forth guidelines for the examination of § 112, 6th paragraph "means or step plus function" limitations in a claim. The court of Appeals for the Federal Circuit, in its en banc decision In re Donaldson 29 USPQ 2d 1845 (Fed. Cir. 1994), decided that a "means-or-step-plus-function" limitation should be interpreted in a manner different than patent examining practice has dictated for at least the last forty-two years. The Donaldson decision affects only the manner in which the scope of a "means or step plus function" limitation in accordance with § 112, 6th paragraph, is interpreted during examination. Donaldson does not directly affect the manner in which any other section of the patent statutes is interpreted or applied.

When making a determination of patentability under 35 U.S.C. §§ 102 or 103, past practice was to interpret a "means or step plus function" limitation by giving it the "broadest reasonable interpretation." Under the PTO's long-standing practice this meant interpreting such a limitation as reading on any prior art means or step which performed the function specified in the claim without regard for whether the prior art means or step was equivalent to the corresponding structure, material or acts described in the specification. However, in Donaldson the Federal Circuit stated that:

Per our holding, the "broadest reasonable interpretation" that an examiner may give means-plus-function language is that statutorily mandated in paragraph six. Accordingly, the PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a Patentability determination.¹

Thus, effective immediately, examiner shall interpret a § 112, 6th paragraph "means or step plus function" limitation in a claim as limited to the corresponding structure, materials or acts described in the specification and equivalents thereof in accordance with the following guidelines.

I. Identifying a § 112, 6th paragraph limitation

¹In re Donaldson , 29 USPQ2d 1845, 1850 (Fed. Cir. 1994).

Although there is no magic language that must appear in a claim in order for it to fall within the scope of § 112, 6th paragraph, it must be clear that the element in the claim is set forth, at least in part, by the function it performs as opposed to the specific structure, material, or acts that perform the function. Limitations that fall within the scope of § 112, 6th paragraph include:

- (1) a jet driving device so constructed and located on the rotor as to drive the rotor . . . ² ["means" unnecessary]
- (2) "printing means" and "means for printing" would have the same connotations ³
- (3) force generating means adapted to provide . . . ⁴
- (4) call cost register means, including a digital display for providing a substantially instantaneous display for . . . ⁵
- (5) reducing the coefficient of friction of the resulting film⁶ [step plus function; "step" unnecessary], and
- (6) raising the Ph of the resultant pulp to about 5.0 to precipitate . . . ⁷

²The term "device" coupled with a function is a proper definition of structure in accordance with the last paragraph of § 112. The addition of the words "jet driving" to the term "device" merely renders the latter more definite and specific. Ex parte Stanley, 121 USPQ 621 (Bd. APP. 1958).

³Ex parte Klum, 159 USPQ 694 (Bd. App. 1967). However, the terms "plate" and "wing", as modifiers of the structureless term "means," specify no function to be performed, and do not fall under the last paragraph of § 112.

⁴De Graffenreid v. U.S., 20 Ct. Cl. 458, 16 USPQ2d 1321 (Ct. Cl. 1990)

⁵Intellicall Inc. v. Phonometrics Inc., 952 F.2d 1384, 21 USPQ2d 1383 (Fed. Cir. 1992).

⁶In re Roberts, 470 F.2d 1399, 176 USPQ 313 (CCPA 1973).

⁷Ex parte Zimmerley, 153 USPQ 367 (Bd. App. 1966)

In the event that it is unclear whether the claim limitation falls within the scope of §112, 6th paragraph, a rejection under §112, 2d paragraph may be appropriate.

Donaldson does not affect the holding of In re Hyatt, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983) to the effect that a single means claim does not comply with the enablement requirement of § 112, first paragraph. As Donaldson applies only to an interpretation of a limitation drafted to correspond to § 112, 6th paragraph, which by its terms is limited to "an element in a claim to a combination," it does not affect a limitation in a claim is not directed to a combination.

II. Examining Procedure

A. Scope of the Search and Identification of the Prior Art

As noted above, in Donaldson the Federal Circuit recognized that it is important to retain the principle that claim language should be given its broadest reasonable interpretation. This principle is important because it helps insure that the statutory presumption of validity attributed to each claim of an issued patent is warranted by the search and examination conducted by the examiner. It is also important from the standpoint that the scope of protection afforded by patents issued prior to Donaldson are not unnecessarily limited by the latest interpretation of this statutory provision. Finally, it is important from the standpoint of avoiding the necessity for a patent specification to become a catalogue of existing technology. 8

The Donaldson decision thus does not substantially alter examining practice and procedure relative to the scope of the search. Both before and after Donaldson, the application of a prior art reference to a means or step plus function limitation requires that the prior art element perform the identical function specified in the claim. However, if a prior art reference teaches identity of function to that specified in a claim, then under Donaldson an examiner carries the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function.

⁸A patent specification need not teach, and preferably omits, what is well known in the art. Hybritech Inc. v. Monoclonal Antibodies. Inc., 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986).

The "means or step plus function" limitation should be interpreted in a manner consistent with the specification disclosure. If the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having the meaning. If no definition is provided, some judgment must be exercised in determining the scope of the limitation.

B. Making a prima facie case of equivalence

If the examiner finds that a prior art element performs the function specified in the claim, and is not excluded by any explicit definition provided in the specification for an equivalent, the examiner should infer from that finding that the prior art element is an equivalent, and should then conclude that the claimed limitation is anticipated by the prior art element. The burden then shifts to applicant⁹ to show that the element shown in the prior art is not an equivalent of the structure, material or acts disclosed in the application. In re Mulder, 716 F.2d 1542, 219 USPQ 189 (Fed. Cir. 1983).¹⁰ The factors to be

⁹No further analysis of equivalents is required of the examiner until applicant disagrees with the examiner's conclusion, and provides reasons why the prior art element should not be considered an equivalent.

¹⁰See also, In re Walter, 618 F.2d at 768, 205 USPQ at 407-08, (a case treating § 112, 6th paragraph, in the context of a determination of statutory subject matter and noting "If the functionally-defined disclosed means and their equivalents are so broad that they encompass any and every means for performing the recited functions . . . the burden must be placed on the applicant to demonstrate that the claims are truly drawn to specific apparatus distinct from other apparatus capable of performing the identical functions"); In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (C.C.P.A. 1971) (a case in which the CCPA treated as improper a rejection under § 112, 2d paragraph, of functional language, but noted that "where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristics relied on"); and In re Fitzgerald 619 F.2d 67, 205 USPQ 594 (CCPA 1980) (a case indicating that the burden of proof can be shifted to the applicant to show that the subject matter of the prior art does not possess the characteristic relied on whether the rejection is based on inherency under § 102 or obviousness under § 103).

considered when determining whether the applicant has successfully met the burden of proving that the prior art element is not equivalent to the structure, material or acts described in the applicant's specification are discussed below.

However, even where the applicant has met that burden of proof and has shown that the prior art element is not equivalent to the structure, material or acts described in the applicant's specification, the examiner must still make a §103 analysis to determine if the claimed means or step plus function is obvious from the prior art to one of ordinary skill in the art. Thus, while a finding of non equivalence prevents a prior art element from anticipating a means or step plus function limitation in a claim, it does not prevent the prior art element from rendering the claim limitation obvious to one of ordinary skill in the art.

Because the exact scope of an "equivalent" may be uncertain, it would be appropriate to apply a §102/§103 rejection where the balance of the claim limitations are anticipated by the prior art relied on.¹¹ In addition, although it is normally the best practice to rely on only the best prior art references in rejecting a claim, alternative grounds of rejection may be appropriate where the prior art shows elements that are different from each other, and different from the specific structure, material or acts described in the specification, yet perform the function specified in the claim.

C. Determining whether an applicant has met the burden of providing non-equivalence after a *prima facie* case is made

If the applicant disagrees with the inference of equivalence drawn from a prior art reference, the applicant may provide reasons why the applicant believes the prior art element should not be considered an equivalent to the specific structure, material or acts disclosed in the specification. Such reasons may include, but are not limited to: 1) teachings in the specification that particular prior art is not equivalent, 2) teaching in the prior art reference itself that may tend to show non-equivalence, or 3) Rule 132 affidavit evidence of facts tending to show non-equivalence.

When the applicant relies on teachings in applicant's own specification, the examiner must make sure that the applicant is interpreting the "means or step plus function" limitation in the

¹¹A similar approach is authorized in the case of product-by-process claim because the exact identity of the claimed product or the prior art product cannot be determined by the examiner. re Brown, 450 F.2d 531, 173 USPQ 685 (CCPA 1972).

claim in a manner which is consistent with the disclosure in the specification. If the specification defines what is meant by "equivalents" to the disclosed embodiments for the purpose of the claimed means or step plus function, the examiner should interpret the limitation as having that meaning. If no definition is provided, some judgment must be exercised in determining the scope of "equivalents." Generally, an "equivalent" is interpreted as embracing more than the specific elements described in the specification for performing the specified function,¹² but less than any element that performs the function specified in the claim.

The scope of equivalents embraced by a claim limitation is dependent on the interpretation of an "equivalent". The interpretation will vary depending on how the element is described in the supporting specification. The claim may or may not be limited to particular structure, material or acts (e.g. steps) as opposed to any and all structure, material or acts performing the claimed function, depending on how the specification treats that question.

If the disclosure is so broad as to encompass any and all structure, material or acts for performing the claimed function, the claims must be read accordingly when determining patentability. When this happens the limitation otherwise provided by "equivalents" ceases to be a limitation on the scope of the claim in that an equivalent would be any structure, material or act other than the ones described in the specification that perform the claimed function. For example, this situation will often be found in cases where (1) the claimed invention is a combination of elements, one or more of which are selected from elements that are old per se, or (2) apparatus claims are treated as indistinguishable from method claims.¹³

¹²To interpret "means plus function" limitations as limited to a particular means set forth in the specification would nullify the provisions of § 112 requiring that the limitation shall be construed to cover the structure described in the specification and equivalents thereof. D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574, 225 USPQ 236, 238 (Fed. Cir. 1985).

¹³See, for example, In re Meyer, 688 F.2d 789, 215 USPQ 193 (1982); In re Abele, 618 F.2d at 768, 205 USPQ at 401-08; In re Walter, 618 F.2d 758, 767, 205 USPQ 397, 406-07 (C.C.P.A. 1980); In re Maucorps, 609 F.2d 481, 203 USPQ 812 (C.C.P.A. 1979); In re Johnson, 589 F.2d, 1070, 200 USPQ 199 (C.C.P.A. 1978); and In re Freeman, 573 F.2d at 1246, 197 USPQ at 471.

On the other end of the spectrum, the "equivalents" limitation as applied to a claim may also operate to constrict the claim scope to the point of covering virtually only the disclosed embodiments. This can happen in circumstances where the specification describes the invention only in the context of a specific structure, material or act that is used to perform the function specified in the claim.

When deciding whether an applicant has met the burden of proof with respect to showing non-equivalence of a prior art element that performs the claimed function, the following factors may be considered. First, unless an element performs the identical function specified in the claim, it cannot be a equivalent for the purpose of §112, 6th paragraph. ¹⁴

Second, while there is no litmus test for an "equivalent" that can be applied with absolute certainty and predictability, there are several indicia that are sufficient to support a conclusion that one element is or is not an "equivalent" of a different element in the context of § 112, 6th paragraph. Among the indicia that will support a conclusion that one element is or is not an equivalent of another are:

- 1) Whether the prior art element performs the function specified in the claim in substantially the same results as the corresponding element disclosed in the specification. ¹⁵
- 2) Whether a person of ordinary skill in the art would have recognized the interchangeability of the element shown in the prior art for the corresponding element disclosed in the specification. ¹⁶

¹⁴Pennwalt Corp. v. Durand-Wayland Inc . 833 F.2d 931, 4 USPQ2d 1737 (Fed. Cir. 1987), cert. denied , 484 U.S. 961 (1988).

¹⁵Lockheed Aircraft Corporation v. United States , 193 USPQ 449, 461 (Ct. Cl. 1977). Graver Tank concepts of equivalents are relevant to any "equivalents" determination. Polumbo v. Don-Joy Co. , 762 F.2d 696, 975, n. 4, 226 USPQ 5, 8-9, n. 4 (Fed. Cir. 1985).

¹⁶Lockheed Aircraft Corporation v. United States , 193 USPQ 449, 461 (Ct. Cl. 1977). Data Line Corp. v. Micro Technologies. Inc ., 813 F.2d 1196, 1 USPQ2d 2052 (Fed. Cir. 1987).

- 3) Whether the prior art element is a structural equivalent of the corresponding element disclosed in the specification being examined.¹⁷ That is, the prior art element performs the function specified in the claim in substantially the same manner as the function is performed by the corresponding element described in the specification.
- 4) Whether the structure, material or acts disclosed in the specification represents an insubstantial change which adds nothing of significance to the prior art element. 18

These examples are not intended to be an exhaustive list of the indicia that would support a finding that one element is or is not an equivalent of another element for the purposes of § 112, 6th paragraph. A finding according to any of the above examples would represent a sufficient, but not the only possible, basis to support a conclusion that an element is or is not an equivalent. There could be other indicia that also would support the conclusion.

In determining whether arguments or Rule 132 evidence presented by an applicant are persuasive that the element shown in the prior art is not an equivalent, the examiner should consider and weigh as many of the above-indicated or other indicia as are presented by applicant, and should determine whether, on balance, the applicant has met the burden of proof to show non-equivalence. However, under no circumstance should an examiner accept as persuasive a bare statement or opinion that the element shown in the prior art is not an equivalent embraced by the claim limitation. Moreover, if an applicant argues that the "means" or "step" plus function language in a claim is limited to certain specific structural or additional functional characteristics (as opposed to "equivalents" thereof) where the specification does not describe the invention as being only those specific characteristics, the claim should not be allowed until the claim is amended to recite those specific structural or additional functional characteristics. 19

¹⁷In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

¹⁸Valmont Industries Inc. v. Reinke Manufacturing Co. Inc., 983 F.2d 1039, 25 USPQ2d 1451 (Fed. Cir. 1993).

¹⁹Otherwise, a claim could be allowed having broad functional language which in reality is limited to only the specific structure or steps disclosed in the specification. This would be

Finally, as in the past, applicant has the opportunity during proceedings before the Office to amend the claims so that the claimed invention meets all the statutory criteria for patentability. An applicant may choose to amend the claim by further limiting the function so that there is no longer identity of function with that taught by the prior art element, or the applicant may choose to replace the claimed means plus function limitation with specific structure material or acts that are not described in the prior art.

D. Related issues under Section 112 first or second paragraphs

The Donaldson decision may create some uncertainty as to what applicant regards as the invention. If this issue arises, it should be addressed in a rejection under §112, 2d paragraph. While § 112, 6th paragraph permits a particular form of claim limitation, it can not be read as creating an exception either to the description, enablement or best mode requirements of the 1st paragraph or the definiteness requirement of the 2d paragraph of § 112. In re Knowlton, 481 F.2d 1357, 178 USPQ 486 (CCPA 1973). If a "means or step plus function" limitation recited in a claim is not supported by corresponding structure, material or acts in the specification disclosure, the following rejections should be considered: (1) under § 112, 1st paragraph, as not being supported by an enabling disclosure because the person skilled in the art would not know how to make and use the invention without a description of elements to perform the function; ²⁰ (2) under § 112, 2d paragraph, as being indefinite because the element or step is not defined in the specification by corresponding structure, material or acts; (3) under §§ 102 or 103 where the prior art anticipates or renders obvious the claimed subject matter including the means or step that performs the function specified in the claim. (Theory: since there is no corresponding structure, etc. in the specification to limit the means or step plus function limitation, an equivalent is any element that performs the specified function).

contrary to public policy of granting patents which provide adequate notice to the public as to a claim's true scope.

²⁰The description of an apparatus with block diagrams describing the function, but not the structure, of the apparatus is not fatal under the enablement requirement of § 112, 1st paragraph, as long as the structure is conventional and can be determined without an undue amount of experimentation. In re Ghiron, 442 F. 2d 985, 991, 169 USPQ 723, 727 (CCPA 1971)

III. Avoid confusion with the doctrine of equivalents

An "equivalent" for the purposes of § 112, 6th paragraph, should not be confused with the doctrine of equivalents. The doctrine of equivalents, most often associated with Graver Tank & Mfg. Co. v. Linde Air Products 339 U.S. 605, 85 USPQ 328 (1950), is sometimes applied to do equity among the parties before the court in an infringement action involving an issued patent. The doctrine typically involves a three-part inquiry - whether an accused device performs substantially the same function, in substantially the same way, to obtain substantially the same result as the claimed invention.

Section § 112, 6th paragraph limits the scope of the broad language of "means or step plus function" limitations, in a claim to a combination, to the structures, materials and acts described in the specification and equivalents thereof. The doctrine of equivalents equitable expands exclusive patent rights beyond the literal scope of a claim. ²¹ Accordingly, decisions involving the doctrine of equivalents should not unduly influence a determination under § 112, 6th paragraph during ex parte examination.

²¹Valmont Industries Inc., Reinke Manufacturing Co., Ind., 983 F.2d 1039, 1043, 1044, 25 USPQ2d 1451, 1455 (Fed. Cir. 1993).